What is Claimed is:

1. A thrombolytic device comprising:

a catheter having a catheter wall, a proximal end, a distal end, and at least one lumen;

a mechanical element, having a near end and a far end, said near end connected to said distal end of said catheter and extending therefrom; and

a motor attached to said proximal end of said catheter for imparting motion to said mechanical element.

2. A thrombolytic device as in claim 1, wherein:

said mechanical element is chosen from the group consisting of a vibrational device, a rotational device, a bi-rotational device, and expansile device, a wave-like undulating device, and a longitudinally-actuated device.

3. A thrombolytic device as in claim 1, wherein said mechanical element is a physical, rotational device operated at a slow speed.

4. A thrombolytic device as in claim 3, wherein said slow speed is less than about 600 revolutions per minute.

5. A thrombolytic device as in claim 3, wherein said slow speed is less than about 250 revolutions per minute.

6. A thrombolytic device as in claim 3, wherein said slow speed is less than about 100 revolutions per minute.

7. A thrombolytic device as in claim 3, wherein said slow speed is less than about 55 revolutions per minute.

8. The thrombolytic device of claim 1, wherein said catheter is a single catheter with a single lumen.

9. A thrombolytic device as in claim 1, wherein:

said catheter wall has a braided construction.

10. A thrombolytic device as in claim 1, wherein:

said catheter wall has a plurality of flexible projections extending externally therefrom.

11. A thrombolytic device as in claim 10, wherein:

said flexible projections are selected from the group consisting of brushes, bristles, deformable mesh braid, flexible wires and tentacles.

12. The thrombolytic device of claim 1, further comprising:

a motor controller connected to said motor, said motor controller is capable of controlling the speed of the motor from 0.1 to 600 revolutions per minute.

13. A thrombolytic device as in claim 12, wherein:

said motor controller is programmable by the user as to motor speed, activation time, and deactivation time.

14. A thrombolytic device as in claim 13, wherein:

said motor controller is programmable by the user to control a motor speed, of from about 0.1 and 600 revolutions per minute, an activation time, and a deactivation time.

15. A thrombolytic device as in claim 1, further comprising:

a sheath encompassing all but said far end of said mechanical element.

16. A thrombolytic device for use with a pharmacological agent comprising:

a catheter having a catheter wall, a proximal end, a distal end, and at least one lumen;

a mechanical element extending from said distal end of said catheter;

a motor attached to said proximal end of said catheter for imparting motion to said mechanical element;

a pharmacological delivery conduit with a first end and a second end, said first end operatively connected to said lumen at said proximal end of said catheter;

a pump for delivering a pharmacological agent, said pump operatively connected to said second end of said conduit.

17. The thrombolytic device of claim 16, further comprising:

a motor controller connected to said motor, and wherein said pump has a variable and adjustable delivery rate.

18. The thrombolytic device of claim 16, further comprising:

an occluding element with a first end and a second end, said first end connected to said far end of said mechanical element and extending therefrom, said second end having a occlusion mechanism for reducing dispersion of said pharmacological agent in an area where a clot resides.

19. A thrombolytic device as in claim 18, wherein said occlusion mechanism is selected from the group consisting of a inflatable balloon, a deformable mesh braid with a membrane, and a malecot with a membrane.

20. A pharmomechanical device, comprising:

means to increase the surface area of a clot in a vascular structure such that said clot can be dissolved by a lytic agent;

means for providing mechanical action for a prolonged period of time while said lytic agent is acting, said mechanical means substantially incapable of damaging an endothelium of said vascular structure.

21. The device as set forth in claim 20, wherein said period is at least about 5 hours.

22. The device as set forth in claim 20, wherein said period is at least about 10 hours.

23. The device as set forth in claim 20, wherein said period is at least about 24 hours.

24. The device as set forth in Claim 20, wherein the mechanical means operates intermittently and over a prolonged period of time.

25. The device as set forth in Claim 24, wherein said mechanical means intermittent operation provides for a time of inactivity at least as great as a time of activity of said device.

26. The device as set forth in Claim 20, wherein said mechanical means generates vibrations effective to disrupt a clot, but does not promote hemolysis or causes damage to an endothelium.

27. The device as set forth in Claim 20, wherein said device extends for a substantial length over which said mechanical action is conducted.

28. The device as set forth in Claim 20, further comprising an occluding element positioned so as to maintain desired concentration of a thrombolytic drug in a desired segment of a patient's blood vessels.

29. The device as set forth in Claim 24, wherein the ratio of an inactivation time to an activation time is greater than 1.

30. The device as set forth in Claim 24, wherein the ratio of an inactivation time to an activation time is greater than 50.

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A method for ameliorating a clot in a patient's blood vessel, comprising:

administering to a patient an amount of contrast medium to determine the extent of a thrombus in the patient's blood vessel;

selecting a catheter having an appropriate length segment, said length segment having a mechanically active portion and an aperture-containing portion, said step of selecting conducted so that said length segment spans the entire length of a clot contained within said patient's blood vessel;

inserting a catheter into said patient's blood vessel;

deploying a distal occlusion element to reduce undesired passage of a thrombolytic drug from said blood vessel;

intermittently activating said mechanically active segment to remove said clot from said blood stream; and

infusing a desired thrombolytic agent through said catheter substantially simultaneously with said step of activating said mechanical segment.

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